

Amendment to the Claims

Please cancel Claims 3, 6, and 8 without prejudice.

Please amend Claims 2, 5, and 7 as follows.

5

1. (canceled)

2. (currently amended) A computer implemented method for combining two or more risk models for providing an investor with a risk model with wider scope than its constituent parts, comprising the steps of said computer:

denoting a class of algorithms for constructing estimates of covariance matrices from time histories of data;

denoting a class of asset classes;

denoting a class of multi-factor risk models for said denoted class of asset
15 classes; and

constructing risk models for each asset class as follows:

applying a method from said denoted class of algorithms to estimate a first
covariance matrix from a history; and

20 applying a different method from said denoted class of algorithms to
estimate a second covariance matrix from a history; and

combining asset class risk models based on said class of multi-factor risk
models and using said estimated first and second covariance matrices to form
and output a risk model with broad coverage that is consistent with each asset
class model.

25

3. (canceled)

4. (previously presented) A computer implement method for combining two or more risk models for providing an investor with a risk model with wider scope than its constituent parts, comprising the steps of said computer:

30

letting C_1 denote a class of algorithms for constructing estimates of a covariance matrices from time histories of data;

letting C_2 denote a class of asset classes;

for x in C_2 let $C_3(x)$, denoting a class of multi-factor risk models for x ;

for y in $C_3(x)$ denoting its parts as follows:

factor exposures $X(y,t)$;

factor returns $f(y,t)$; and

specific covariance matrix $D(y,t)$;

5 giving the following components:

two or more asset classes x_1, \dots, x_n , let x denote an asset class which is a union of these given asset classes;

for each asset class x_i giving a risk model y_i in $C_3(x_i)$;

letting $Y(t)$ be such that the decomposition

$$10 \quad \begin{pmatrix} f(y_1 t) \\ f(y_2 t) \\ \vdots \\ f(y_n t) \end{pmatrix} = \begin{pmatrix} y_1(t) \\ y_2(t) \\ \vdots \\ y_n(t) \end{pmatrix} g(t) + \begin{pmatrix} \sum_1(t) \\ \sum_2(t) \\ \vdots \\ \sum_n(t) \end{pmatrix}$$

$f(t) \qquad y(t) \qquad \Sigma(t)$

which results in residuals $\Sigma(t)$, such that correlations $(\Sigma_i(t), \Sigma_j(t)) = 0$ if $i \neq j$; and constructing a risk model for x as follows:

15 forming $X(t) = \text{diag}(X(y_1, t), \dots, X(y_n, t))$;

forming $D(t) = \text{diag}(D(y_1, t), \dots, D(y_n, t))$;

applying a method C_1 to estimate a covariance matrix $G(t)$ from a history of $g(t)$ s; and

20 applying an optionally different method on C_1 to estimate a covariance matrix $\phi(t)$ from a history of the $\Sigma(t)$ s;

wherein $X(t)[Y(t)G(t)Y(t)^t + \phi(t)]X(t)^t + D(t)$ is a risk model for x .

5. (currently amended) A system for combining two or more risk models for providing an investor with a risk model with wider scope than its constituent parts, comprising:

25 computer means for denoting a class of algorithms for constructing estimates of a covariance matrices from time histories of data;

computer means for denoting a class of asset classes;
computer means for denoting a class of multi-factor risk models for said denoted class of asset classes; and
computer means for constructing risk models for each asset class as follows:
5 applying a method from said denoted class of algorithms to estimate a first
covariance matrix from a history; and
 applying a different method from said denoted class of algorithms to
estimate a second covariance matrix from a history; and
 combining asset class risk models based on said class of multi-factor risk
10 models and using said estimated first and second covariance matrices to form
and output a risk model with broad coverage that is consistent with each asset
class model.

6. (canceled)

15 7. (currently amended) A computer program product comprising a computer useable
medium having control logic stored therein for causing a computer to combine two or
more risk models for providing an investor with a risk model with wider scope than its
constituent parts, comprising:

20 computer readable program code means for causing the computer to denote a
class of algorithms for constructing estimates of a covariance matrices from time
histories of data;

 computer readable program code means for causing the computer to denote a
class of asset classes;

25 computer readable program code means for causing the computer to denote a
class of multi-factor risk models for said denoted class of asset classes; and

 computer readable program code means for causing the computer to construct
risk models for each asset class as follows:

30 applying a method from said denoted class of algorithms to estimate a first
covariance matrix from a history; and

applying a different method from said denoted class of algorithms to
estimate a second covariance matrix from a history; and

 combining asset class risk models based on said class of multi-factor risk
models and using said estimated first and second covariance matrices to form
35 and output a risk model with broad coverage that is consistent with each asset
class model.

8. (canceled)